

INTERNATIONAL PROVISIONAL
REPORT ON PATENTABILITY
(ADDITIONAL SHEET)

International File Number

PCT/EP2004/007945

Regarding Point V

Substantiated finding as regards novelty, inventive activity and commercial applicability; documents and explanations in support of the finding

1. Reference is made to the following documents:

D1: DE 524 329 C (SIEMENS SCHUCKERTWERKE AKT GES) 13 May 1931

D2: US 3,203,177 A (JOHNSON LLOYD E) 31 August 1965

2. Document D1 is considered to be the nearest prior art with regard to the subject of claim 1. It discloses a (the references in brackets relate to this document):

method for braking a rotor of a turbine engine, with a turning gear which has a drive (9) fed from an energy source and having a drive shaft to which the rotor (10) can be coupled, during a cooling phase of the turbine the rotor being driven by the drive by means of the then coupled drive shaft (claim 1).

2.1 The subject of claim 1 therefore differs from the known method in that, after the conclusion of the cooling phase, the rotor is braked to a standstill, in that the latter drives the drive in reverse operation by means of the coupled drive shaft.

2.2 The subject of claim 1 is therefore novel (PCT Article 33(2)).

2.3 The object to be achieved by means of the present invention can thus be seen in providing a method for braking the rotor to a standstill.

2.4 The solution proposed in claim 1 of the present application for achieving this object is based on inventive activity (PCT Article 33(3)) for the following reasons:

It is admittedly known from D2 to use a drive as a load element in order to brake the rotor. In the method known from D2, however, it is not possible to brake the rotor to a complete standstill.

Moreover, in the device known from D1, a person skilled in the art would not attempt to brake the rotor to a standstill, because D1 (page 1, column 1, lines 10-19) warns that this could lead to faults.

3. Nor is a turning gear, which is suitable (claim 6) for carrying out the method as claimed in claim 1, known from D1: in D1, a generator ("an exciting machine 9") is employed in order to drive the rotor of the gas turbine during the cooling phase. However, this generator is not suitable for braking the rotor to a standstill.

3.1 The subject of claim 6 is therefore novel (PCT Article 33(2)).

3.2 It is not obvious to a person skilled in the art to change the device known from D1 in such a way that this may be employed in order to brake the rotor to a standstill.

To be precise, D1 leads a person skilled in the art away from this change, since the stopping of the rotor is not desired (see page 1, column 1, lines 10-19).

3.3 The subject of claim 6 is therefore based on inventive activity (PCT Article 33(3)).

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4. Claims 2-5 and 7-9 are dependent on claims 1 and 6 and consequently likewise fulfill the requirements of the PCT with regard to novelty and to inventive activity.

5. The invention is applicable industrially in the field of turbine engines (PCT Article 33(4)).